

What is claimed is:

1. An accessory for attachment to a powered surgical tool, comprising:

a shaft designed for one of manipulating and analyzing tissue;

a coupling designed to removably attach said shaft to the powered surgical tool and facilitate a transfer of power from the powered surgical tool to said shaft; and

a transponder removably secured within said accessory and configured to wirelessly communicate at least one of identification and operational information concerning said accessory to the powered surgical tool, said transponder comprising a solid state chip and an attached length of electrical conductor embedded within a solid substrate.

2. The accessory according to Claim 1, wherein said solid substrate is formed in a shape of a ring.

3. The accessory according to Claim 1, wherein said solid substrate is constructed of plastic.

4. The accessory according to Claim 1, wherein said coupling comprises a generally cylindrical structure defining a coupling bore, and wherein said coupling includes an end opening which communicates with said coupling bore into which said transponder is inserted.

5. The accessory according to Claim 1, wherein said shaft is associated with one of a cutting tool, a

heat generating device, a light generating device and a sound/mechanical-vibration generating device.

6. An identification module for a removable accessory of a surgical tool, comprising:

a solid state chip having one or more memory fields for storing at least one of identification information and operational information concerning the removable accessory;

an antenna in electrical communication with said solid state chip; and

an enclosure in which is encapsulated said solid state chip and antenna,

wherein said identification module is removably secured within a removable accessory and is configured to wirelessly communicate said one of identification information and operational information to a surgical tool when the removable accessory is attached to the surgical tool.

7. The identification module according to Claim 6, wherein said antenna comprises one or more turns of a length of electrical conductor.

8. The identification module according to Claim 6, wherein said enclosure is constructed of plastic.

9. The identification module according to Claim 6, wherein said enclosure is formed in a shape of a ring.

10. The accessory according to Claim 8, wherein said enclosure comprises an annular base circumscribed by

inner and outer opposed sidewalls, respectively, that define an interior channel open to an exterior through an annular opening.

11. The accessory according to Claim 10, wherein said solid state chip and attached length of electrical conductor are inserted through said annular opening into said interior channel and said interior channel is sealed off by filling said channel with a sealant.

12. A cutting accessory for actuation by a powered surgical handpiece, said cutting accessory comprising:

- a drive hub formed with at least one geometric feature for causing said drive hub to engage an output shaft of a handpiece motor;

- a drive shaft that extends forward from said drive hub;

- an outer hub disposed over said drive hub, said outer hub having: a base that has an inner wall that defines an outer hub bore with an outer hub proximal end opening, said drive hub being at least partially seated in the outer hub bore; and a distal end opening through which said drive shaft extends;

- a removable accessory identification assembly including:

- a support member seated in the outer hub bore and spaced distally away from the outer hub proximal end opening, said support member being positioned against the base inner wall;

- an RFID chip mounted to said support member;
  - and

a coil of electrical conductor connected to said RFID chip and mounted to said support member; and

a seal disposed in the outer hub bore so as to extend out of the outer hub proximal end opening, said seal being disposed against the inner wall of said outer hub base, wherein said accessory identification assembly support member seats against a distal facing surface of said seal.

13. The cutting accessory of Claim 12, wherein said seal is shaped to have first and second longitudinally spaced apart end sections abutting and circumferentially surrounding the inner wall of said outer hub base, and a main section that extends between said end sections and has an outer surface that is spaced inwardly of the inner wall of said outer hub base.

14. The cutting accessory of Claim 13, wherein said outer hub base and said seal are collectively dimensioned so insertion of said seal against the inner wall of said outer hub base causes said seal end sections to form a moisture tight barrier between said outer hub base and said seal.

15. The cutting accessory of Claim 12, wherein said support member of said accessory identification assembly is one of a ring and a disc into which are embedded said RFID chip and said coil.

16. The cutting accessory of Claim 15, wherein said support member is a preformed enclosure defining an interior for receiving said RFID chip and coil.

17. The cutting accessory of Claim 16, wherein said RFID chip and coil are sealed inside said enclosure by means of a sealant.

18. The cutting accessory of Claim 12, wherein:  
said outer hub base is formed with at least one lateral opening; and  
said seal is formed with a lock tab that extends through the lateral opening in said outer hub base.

19. The cutting accessory of Claim 12, wherein said seal is further formed to define at least one rib that is located outside of the proximal end of said outer hub base, said at least one rib surrounding the outer hub proximal end opening.

20. The cutting accessory of Claim 12, wherein:  
said drive hub is shaped to have a proximally-located neck that has a diameter and a distally-located head that has a diameter, the diameter of said head being greater than the diameter of said neck; and  
said seal is shaped to have at least one stop tab that extends inwardly from an inner surface of said seal towards said drive hub stem, and said at least one stop tab is dimensioned so that said stop tab has an inner surface that defines an open section within the outer hub base bore that has a diameter greater than the diameter

of said drive hub neck and less than the diameter of said drive hub neck head.

21. A cutting accessory for actuation by a powered surgical handpiece, said cutting accessory comprising:

- a drive hub formed with at least one geometric feature for causing said drive hub to engage an output shaft of a handpiece motor;

- a drive shaft that extends forward from said drive hub;

- an outer hub, having: opposed proximal and distal ends; an axially extending through bore that extends from the proximal end to the distal end of said outer hub, said bore having a proximal end opening and a distal end opening; an inner wall that defines a proximal end section of the bore; and at least one lateral opening that extends from said inner wall to an adjacent outer wall of said outer hub and wherein, said drive hub extends out of the proximal end opening and said drive shaft extends out of the distal end opening;

- a self-contained removable transponder disposed in the proximal end section of the outer hub bore, said transponder being configured to wirelessly communicate at least one of identification information and operational information concerning said cutting accessory to said surgical handpiece; and

- a seal disposed in the proximal end section of the outer hub bore between the proximal end opening and said transponder.

22. The cutting accessory of Claim 21, wherein said transponder comprises an RFID chip and an attached coil

of electrical conductor encapsulated within a solid substrate.

23. The cutting accessory of Claim 22, wherein said RFID chip and attached coil are inserted into a plastic enclosure and covered with a sealant.

24. The cutting accessory of Claim 23, wherein said plastic enclosure is formed in a shape of one of a ring and a disc.

25. The cutting accessory of Claim 23, wherein said sealant is one of liquid resin and silicone.

26. The cutting accessory of Claim 21, wherein:  
said seal is shaped to have a distally directed end face; and  
said transponder seats against the distally directed face of said seal.

27. The cutting accessory of Claim 21, wherein said seal is shaped to have front and rear longitudinally spaced apart end sections and a main section that extends between said end sections, each said end section shaped to abut the inner wall of said outer hub, the rear end section being the portion of said seal located between the proximal end opening of the outer hub bore and said transponder.

28. The cutting accessory of Claim 21, wherein said seal is further formed to define at least one rib that is

located outside of the outer hub bore and said at least one rib surrounds the outer hub proximal end opening.

29. The cutting accessory of Claim 21, wherein:  
said drive hub is shaped to have a proximally-located neck that has a diameter and a distally-located head that has a diameter, the diameter of said head being greater than the diameter of said neck; and

said seal is shaped to have at least one stop tab that extends inwardly from an inner surface of said seal towards said drive hub stem, and said at least one stop tab is dimensioned so that said stop tab has an inner surface that defines an open section within the outer hub base bore that has a diameter greater than the diameter of said drive hub neck and less than the diameter of said drive neck head.